FIGURE 1A

```
ATGGGC GCACTGGCCCGG GCGCTGCTGCTG CCTCTGCTGGCC CAGTGGCTCCTG CGCGCC
 M   G   A   L   A   R   A   L   L   L   P   L   L   A   Q   W   L   L   R   A
CCCCGG AGCTGGCCCCCG CGCCCTTCACGC TGCCCCTCCGGG TGGCCGCGGCCA CGAAC
 A   P   E   L   A   P   A   P   F   T   L   P   L   R   V   A   A   A   T   N
CGCGTA GTTGCGCCCACC CCGGGACCCGGG ACCCCTGCCGAG CGCCACGCCGAC GGCTTG
 R   V   V   A   P   T   P   G   P   G   T   P   A   E   R   H   A   D   G   L
GCGCTC GCCCTGGAGCCT GCCCTGGCGTCC CCCGCGGGCGCC GCCAACTTCTTG GCCATG
 A   L   A   L   E   P   A   L   A   S   P   A   G   A   A   N   F   L   A   M
GTAGAC AACCTGCAGGGG GACTCTGGCCGC GGCTACTACCTG GAGATGCTGATC GGGACC
 V   D   N   L   Q   G   D   S   G   R   G   Y   Y   L   E   M   L   I   G   T

CCCCCG CAGAAGCTACAG ATTCTCGTTGAC ACTGGAAGCAGT AACTTTGCCGTG GCAGGA
 P   P   Q   K   L   Q   I   L   V   D   T   G   S   S   N   F   A   V   A   G

ACCCCG CACTCCTACATA GACACGTACTTT GACACAGAGAGG TCTAGCACATAC CGCTCC
 T   P   H   S   Y   I   D   T   Y   F   D   T   E   R   S   S   T   Y   R   S

AAGGGC TTTGACGTCACA GTGAAGTACACA CAAGGAAGCTGG ACGGGCTTCGTT GGGGAA
 K   G   F   D   V   T   V   K   Y   T   Q   G   S   W   T   G   F   V   G   E

GACCTC GTCACCATCCCC AAAGGCTTCAAT ACTTCTTTTCTT GTCAACATTGCC ACTATT
 D   L   V   T   I   P   K   G   F   N   T   S   F   L   V   N   I   A   T   I

TTTGAA TCAGAGAATTTC TTTTTGCCTGGG ATTAAATGGAAT GGAATACTTGGC CTAGCT
 F   E   S   E   N   F   F   L   P   G   I   K   W   N   G   I   L   G   L   A

TATGCC ACACTTGCCAAG CCATCAAGTTCT CTGGAGACCTTC TTCGACTCCCTG GTGACA
 Y   A   T   L   A   K   P   S   S   S   L   E   T   F   F   D   S   L   V   T

CAAGCA AACATCCCCAAC GTTTTCTCCATG CAGATGTGTGGA GCCGGCTTGCCC GTTGCT
 Q   A   N   I   P   N   V   F   S   M   Q   M   C   G   A   G   L   P   V   A

GGATCT GGGACCAACGGA GGTAGTCTTGTC TTGGGTGGAATT GAACCAAGTTTG TATAAA
 G   S   G   T   N   G   G   S   L   V   L   G   G   I   E   P   S   L   Y   K

GGAGAC ATCTGGTATACC CCTATTAAGGAA GAGTGGTACTAC CAGATAGAAATT CTGAAA
 G   D   I   W   Y   T   P   I   K   E   E   W   Y   Y   Q   I   E   I   L   K

TTGGAA ATTGGAGGCCAA AGCCTTAATCTG GACTGCAGAGAG TATAACGCAGAC AAGGCC
 L   E   I   G   G   Q   S   L   N   L   D   C   R   E   Y   N   A   D   K   A

ATCGTG GACAGTGGCACC ACGCTGCTGCGC CTGCCCCAGAAG GTGTTTGATGCG GTGGTG
 I   V   D   S   G   T   T   L   L   R   L   P   Q   K   V   F   D   A   V   V

GAAGCT GTGGCCCGCGCA TCTCTGATTCCA GAATTCTCTGAT GGTTTCTGGACT GGGTCC
 E   A   V   A   R   A   S   L   I   P   E   F   S   D   G   F   W   T   G   S

CAGCTG GCGTGCTGGACG AATTCGGAAACA CCTTGGTCTTAC TTCCCTAAAATC TCCATC
 Q   L   A   C   W   T   N   S   E   T   P   W   S   Y   F   P   K   I   S   I

TACCTG AGAGATGAGAAC TCCAGCAGGTCA TTCCGTATCACA ATCCTGCCTCAG CTTTAC
 Y   L   R   D   E   N   S   S   R   S   F   R   I   T   I   L   P   Q   L   Y

ATTCAG CCCATGATGGGG GCCGGCCTGAAT TATGAATGTTAC CGATTCGGCATT TCCCCA
 I   Q   P   M   M   G   A   G   L   N   Y   E   C   Y   R   F   G   I   S   P

TCCACA AATGCGCTGGTG ATCGGTGCCACG GTGATGGAGGGC TTCTACGTCATC TTCGAC
 S   T   N   A   L   V   I   G   A   T   V   M   E   G   F   Y   V   I   F   D

AGAGCC CAGAAGAGGGTG GGCTTCGCAGCG AGCCCCTGTGCA GAAATTGCAGGT GCTGCA
```

FIGURE 1B

```
R   A   Q   K   R   V   G   F   A   A   S   P   C   A   E   I   A   G   A   A

GTGTCTGAAATTTCCGGGCCTTTCTCAACAGAGGATGTAGCCAGCAACTGTGTCCCCGCT
V   S   E   I   S   G   P   F   S   T   E   D   V   A   S   N   C   V   P   A

CAGTCTTTGAGCGAGCCCATTTTGTGGATTGTGTCCTATGCGCTCATGAGCGTCTGTGGA
Q   S   L   S   E   P   I   L   W   I   V   S   Y   A   L   M   S   V   C   G

GCCATCCTCCTTGTCTTAATCGTCCTGCTGCTGCTGCCGTTCCGGTGTCAGCGTCGCCCC
A   I   L   L   V   L   I   V   L   L   L   P   F   R   C   Q   R   R   P

CGTGACCCTGAGGTCGTCAATGATGAGTCCTCTCTGGTCAGACATCGCTGGAAATGAATA
R   D   P   E   V   V   N   D   E   S   S   L   V   R   H   R   W   K

GCCAGGCCTGACCTCAAGCAACCATGAACTCAGCTATTAAGAAAATCACATTTCCAGGGC
AGCAGCCGGGATCGATGGTGGCGCTTTCTCCTGTGCCCACCCGTCTTCAATCTCTGTTCT
GCTCCCAGATGCCTTCTAGATTCACTGTCTTTTGATTCTTGATTTTCAAGCTTTCAAATC
CTCCCTACTTCCAAGAAAAATAATTAAAAAAAAAACTTCATTCTAAACCAAAAAAAAAAA
AAAA
```

FIGURE 2A

```
ATGGCC CAAGCCCTGCCC TGGCTCCTGCTG TGGATGGGCGCG GGAGTGCTGCCT GCCCAC
M    A    Q    A    L    P    W    L    L    L    W    M    G    A    G    V    L    P    A    H

GGCACC CAGCACGGCATC CGGCTGCCCCTG CGCAGCGGCCTG GGGGGCGCCCCC CTGGGG
G    T    Q    H    G    I    R    L    P    L    R    S    G    L    G    G    A    P    L    G

CTGCGG CTGCCCCGGGAG ACCGACGAAGAG CCCGAGGAGCCC GGCCGGAGGGGC AGCTTT
L    R    L    P    R    E    T    D    E    E    P    E    E    P    G    R    R    G    S    F

GTGGAG ATGGTGGACAAC CTGAGGGGCAAG TCGGGGCAGGGC TACTACGTGGAG ATGACC
V    E    M    V    D    N    L    R    G    K    S    G    Q    G    Y    Y    V    E    M    T

GTGGGC AGCCCCCCGCAG ACGCTCAACATC CTGGTGGATACA GGCAGCAGTAAC TTTGCA
V    G    S    P    P    Q    T    L    N    I    L    V    D    T    G    S    S    N    F    A

GTGGGT GCTGCCCCCCAC CCCTTCCTGCAT CGCTACTACCAG AGGCAGCTGTCC AGCACA
V    G    A    A    P    H    P    F    L    H    R    Y    Y    Q    R    Q    L    S    S    T

TACCGG GACCTCCGGAAG GGTGTGTATGTG CCCTACACCCAG GGCAAGTGGGAA GGGGAG
Y    R    D    L    R    K    G    V    Y    V    P    Y    T    Q    G    K    W    E    G    E

CTGGGC ACCGACCTGGTA AGCATCCCCCAT GGCCCCAACGTC ACTGTGCGTGCC AACATT
L    G    T    D    L    V    S    I    P    H    G    P    N    V    T    V    R    A    N    I

GCTGCC ATCACTGAATCA GACAAGTTCTTC ATCAACGGCTCC AACTGGGAAGGC ATCCTG
A    A    I    T    E    S    D    K    F    F    I    N    G    S    N    W    E    G    I    L

GGGCTG GCCTATGCTGAG ATTGCCAGGCTT TGTGGTGCTGGC TTCCCCCTCAAC CAGTCT
G    L    A    Y    A    E    I    A    R    L    C    G    A    G    F    P    L    N    Q    S

GAAGTG CTGGCCTCTGTC GGAGGGAGCATG ATCATTGGAGGT ATCGACCACTCG CTGTAC
E    V    L    A    S    V    G    G    S    M    I    I    G    G    I    D    H    S    L    Y

ACAGGC AGTCTCTGGTAT ACACCCATCCGG CGGGAGTGGTAT TATGAGGTGATC ATTGTG
T    G    S    L    W    Y    T    P    I    R    R    E    W    Y    Y    E    V    I    I    V

CGGGTG GAGATCAATGGA CAGGATCTGAAA ATGGACTGCAAG GAGTACAACTAT GACAAG
R    V    E    I    N    G    Q    D    L    K    M    D    C    K    E    Y    N    Y    D    K

AGCATT GTGGACAGTGGC ACCACCAACCTT CGTTTGCCCAAG AAAGTGTTTGAA GCTGCA
S    I    V    D    S    G    T    T    N    L    R    L    P    K    K    V    F    E    A    A

GTCAAA TCCATCAAGGCA GCCTCCTCCACG GAGAAGTTCCCT GATGGTTTCTGG CTAGGA
V    K    S    I    K    A    A    S    S    T    E    K    F    P    D    G    F    W    L    G

GAGCAG CTGGTGTGCTGG CAAGCAGGCACC ACCCCTTGGAAC ATTTTCCCAGTC ATCTCA
E    Q    L    V    C    W    Q    A    G    T    T    P    W    N    I    F    P    V    I    S

CTCTAC CTAATGGGTGAG GTTACCAACCAG TCCTTCCGCATC ACCATCCTTCCG CAGCAA
L    Y    L    M    G    E    V    T    N    Q    S    F    R    I    T    I    L    P    Q    Q

TACCTG CGGCCAGTGGAA GATGTGGCCACG TCCCAAGACGAC TGTTACAAGTTT GCCATC
```

FIGURE 2B

Y   L   R   P   V   E   D   V   A   T   S   Q   D   D   C   Y   K   F   A   I

TCACAG TCATCCACGGGC ACTGTTATGGGA GCTGTTATCATG GAGGGCTTCTAC GTTGTC
S   Q   S   S   T   G   T   V   M   G   A   V   I   M   E   G   F   Y   V   V

TTTGAT CGGGCCCGAAAA CGAATTGGCTTT GCTGTCAGCGCT TGCCATGTGCAC GATGAG
F   D   R   A   R   K   R   I   G   F   A   V   S   A   C   H   V   H   D   E

TTCAGG ACGGCAGCGGTG GAAGGCCCTTTT GTCACCTTGGAC ATGGAAGACTGT GGCTAC
F   R   T   A   A   V   E   G   P   F   V   T   L   D   M   E   D   C   G   Y

AACATT CCACAGACAGAT GAGTCAACCCTC ATGACCATAGCC TATGTCATGGCT GCCATC
N   I   P   Q   T   D   E   S   T   L   M   T   I   A   Y   V   M   A   A   I

TGCGCC CTCTTCATGCTG CCACTCTGCCTC ATGGTGTGTCAG TGGCGCTGCCTC CGCTGC
C   A   L   F   M   L   P   L   C   L   M   V   C   Q   W   R   C   L   R   C

CTGCGC CAGCAGCATGAT GACTTTGCTGAT GACATCTCCCTG CTGAAGTGAGGA GGCCCA
L   R   Q   Q   H   D   D   F   A   D   D   I   S   L   L   K

TGGGCA GAAGATAGAGAT TCCCCTGGACCA CACCTCCGTGGT TCACTTTGGTCA CAAGTA
GGAGAC ACAGATGGCACC TGTGGCCAGAGC ACCTCAGGACCC TCCCCACCCACC AAATGC
CTCTGC CTTGATGGAGAA GGAAAAGGCTGG CAAGGTGGGTTC CAGGGACTGTAC CTGTAG
GAAACA GAAAAGAGAAGA AAGAAGCACTCT GCTGGCGGGAAT ACTCTTGGTCAC CTCAAA
TTTAAG TCGGGAAATTCT GCTGCTTGAAAC TTCAGCCCTGAA CCTTTGTCCACC ATTCCT
TTAAAT TCTCCAACCCAA AGTATTCTTCTT TTCTTAGTTTCA GAAGTACTGGCA TCACAC
GCAGGT TACCTTGGCGTG TGTCCCTGTGGT ACCCTGGCAGAG AAGAGACCAAGC TTGTTT
CCCTGC TGGCCAAAGTCA GTAGGAGAGGAT GCACAGTTTGCT ATTTGCTTTAGA GACAGG
GACTGT ATAAACAAGCCT AACATTGGTGCA AAGATTGCCTCT TGAAAAAAAAAA AAA

FIGURE 3A

```
ATGGCC CAAGCCCTGCCC TGGCTCCTGCTG TGGATGGGCGCG GGAGTGCTGCCT GCCCAC
M   A   Q   A   L   P   W   L   L   L   W   M   G   A   G   V   L   P   A   H

GGCACC CAGCACGGCATC CGGCTGCCCCTG CGCAGCGGCCTG GGGGGCGCCCCC CTGGGG
G   T   Q   H   G   I   R   L   P   L   R   S   G   L   G   G   A   P   L   G

CTGCGG CTGCCCCGGGAG ACCGACGAAGAG CCCGAGGAGCCC GGCCGGAGGGGC AGCTTT
L   R   L   P   R   E   T   D   E   E   P   E   E   P   G   R   R   G   S   F

GTGGAG ATGGTGGACAAC CTGAGGGGCAAG TCGGGGCAGGGC TACTACGTGGAG ATGACC
V   E   M   V   D   N   L   R   G   K   S   G   Q   G   Y   Y   V   E   M   T

GTGGGC AGCCCCCCGCAG ACGCTCAACATC CTGGTGGATACA GGCAGCAGTAAC TTTGCA
V   G   S   P   P   Q   T   L   N   I   L   V   D   T   G   S   S   N   F   A

GTGGGT GCTGCCCCCCAC CCCTTCCTGCAT CGCTACTACCAG AGGCAGCTGTCC AGCACA
V   G   A   A   P   H   P   F   L   H   R   Y   Y   Q   R   Q   L   S   S   T

TACCGG GACCTCCGGAAG GGTGTGTATGTG CCCTACACCCAG GGCAAGTGGGAA GGGGAG
Y   R   D   L   R   K   G   V   Y   V   P   Y   T   Q   G   K   W   E   G   E

CTGGGC ACCGACCTGGTA AGCATCCCCCAT GGCCCCAACGTC ACTGTGCGTGCC AACATT
L   G   T   D   L   V   S   I   P   H   G   P   N   V   T   V   R   A   N   I

GCTGCC ATCACTGAATCA GACAAGTTCTTC ATCAACGGCTCC AACTGGGAAGGC ATCCTG
A   A   I   T   E   S   D   K   F   F   I   N   G   S   N   W   E   G   I   L

GGGCTG GCCTATGCTGAG ATTGCCAGGCCT GACGACTCCCTG GAGCCTTTCTTT GACTCT
G   L   A   Y   A   E   I   A   R   P   D   D   S   L   E   P   F   F   D   S

CTGGTA AAGCAGACCCAC GTTCCCAACCTC TTCTCCCTGCAG CTTTGTGGTGCT GGCTTC
L   V   K   Q   T   H   V   P   N   L   F   S   L   Q   L   C   G   A   G   F

CCCCTC AACCAGTCTGAA GTGCTGGCCTCT GTCGGAGGGAGC ATGATCATTGGA GGTATC
P   L   N   Q   S   E   V   L   A   S   V   G   G   S   M   I   I   G   G   I

GACCAC TCGCTGTACACA GGCAGTCTCTGG TATACACCCATC CGGCGGGAGTGG TATTAT
D   H   S   L   Y   T   G   S   L   W   Y   T   P   I   R   R   E   W   Y   Y

GAGGTC ATCATTGTGCGG GTGGAGATCAAT GGACAGGATCTG AAAATGGACTGC AAGGAG
E   V   I   I   V   R   V   E   I   N   G   Q   D   L   K   M   D   C   K   E

TACAAC TATGACAAGAGC ATTGTGGACAGT GGCACCACCAAC CTTCGTTTGCCC AAGAAA
Y   N   Y   D   K   S   I   V   D   S   G   T   T   N   L   R   L   P   K   K

GTGTTT GAAGCTGCAGTC AAATCCATCAAG GCAGCCTCCTCC ACGGAGAAGTTC CCTGAT
V   F   E   A   A   V   K   S   I   K   A   A   S   S   T   E   K   F   P   D
```

FIGURE 3B

```
GGTTTC TGGCTAGGAGAG CAGCTGGTGTGC TGGCAAGCAGGC ACCACCCCTTGG AACATT
G    F    W    L    G    E    Q    L    V    C    W    Q    A    G    T    T    P    W    N    I

TTCCCA GTCATCTCACTC TACCTAATGGGT GAGGTTACCAAC CAGTCCTTCCGC ATCACC
F    P    V    I    S    L    Y    L    M    G    E    V    T    N    Q    S    F    R    I    T

ATCCTT CCGCAGCAATAC CTGCGGCCAGTG GAAGATGTGGCC ACGTCCCAAGAC GACTGT
I    L    P    Q    Q    Y    L    R    P    V    E    D    V    A    T    S    Q    D    D    C

TACAAG TTTGCCATCTCA CAGTCATCCACG GGCACTGTTATG GGAGCTGTTATC ATGGAG
Y    K    F    A    I    S    Q    S    S    T    G    T    V    M    G    A    V    I    M    E

GGCTTC TACGTTGTCTTT GATCGGGCCCGA AAACGAATTGGC TTTGCTGTCAGC GCTTGC
G    F    Y    V    V    F    D    R    A    R    K    R    I    G    F    A    V    S    A    C

CATGTG CACGATGAGTTC AGGACGGCAGCG GTGGAAGGCCCT TTTGTCACCTTG GACATG
H    V    H    D    E    F    R    T    A    A    V    E    G    P    F    V    T    L    D    M

GAAGAC TGTGGCTACAAC ATTCCACAGACA GATGAGTCAACC CTCATGACCATA GCCTAT
E    D    C    G    Y    N    I    P    Q    T    D    E    S    T    L    M    T    I    A    Y

GTCATG GCTGCCATCTGC GCCCTCTTCATG CTGCCACTCTGC CTCATGGTGTGT CAGTGG
V    M    A    A    I    C    A    L    F    M    L    P    L    C    L    M    V    C    Q    W

CGCTGC CTCCGCTGCCTG CGCCAGCAGCAT GATGACTTTGCT GATGACATCTCC CTGCTG
R    C    L    R    C    L    R    Q    Q    H    D    D    F    A    D    D    I    S    L    L

AAGTGA GGAGGCCCATGG GCAGAAGATAGA GATTCCCCTGGA CCACACCTCCGT GGTTCA
K

CTTTGG TCACAAGTAGGA GACACAGATGGC ACCTGTGGCCAG AGCACCTCAGGA CCCTCC
CCACCC ACCAAATGCCTC TGCCTTGATGGA GAAGGAAAAGGC TGGCAAGGTGGG TTCCAG
GGACTG TACCTGTAGGAA ACAGAAAAGAGA AGAAAGAAGCAC TCTGCTGGCGGG AATACT
CTTGGT CACCTCAAATTT AAGTCGGGAAAT TCTGCTGCTTGA AACTTCAGCCCT GAACCT
TTGTCC ACCATTCCTTTA AATTCTCCAACC CAAAGTATTCTT CTTTTCTTAGTT TCAGAA
GTACTG GCATCACACGCA GGTTACCTTGGC GTGTGTCCCTGT GGTACCCTGGCA GAGAAG
AGACCA AGCTTGTTTCCC TGCTGGCCAAAG TCAGTAGGAGAG GATGCACAGTTT GCTATT
TGCTTT AGAGACAGGGAC TGTATAAACAAG CCTAACATTGGT GCAAAGATTGCC TCTTGA
ATTAAA AAAAAAAAAAAA AAAAAAAAAAAA
```

FIGURE 4

```
ATGGC CCCAGCGCTGCA CTGGCTCCTGCT ATGGGTGGGCTC GGGAATGCTGCC TGCCCAG
  M  A  P  A  L  H  W  L  L  L  W  V  G  S  G  M  L  P  A  Q
GGAAC CCATCTCGGCAT CCGGCTGCCCCT TCGCAGCGGCCT GGCAGGGCCACC CCTGGGC
  G  T  H  L  G  I  R  L  P  L  R  S  G  L  A  G  P  P  L  G
CTGAGGCTGCCCCGGGA GACTGACGAGGA ATCGGAGGAGCC TGGCCGGAGAGG CAGCTTT
  L  R  L  P  R  E  T  D  E  E  S  E  E  P  G  R  R  G  S  F
GTGGA GATGGTGGACAA CCTGAGGGGAAA GTCCGGCCAGGG CTACTATGTGGA GATGACC
  V  E  M  V  D  N  L  R  G  K  S  G  Q  G  Y  Y  V  E  M  T
GTAGG CAGCCCCCCACA GACGCTCAACAT CCTGGTGGACAC GGGCAGTAGTAA CTTTGCA
  V  G  S  P  P  Q  T  L  N  I  L  V  D  T  G  S  S  N  F  A
GTGGGGGGCTGCCCCACA CCCTTTCCTGCA TCGCTACTACCA GAGGCAGCTGTC CAGCACA
  V  G  A  A  P  H  P  F  L  H  R  Y  Y  Q  R  Q  L  S  S  T
TATCG AGACCTCCGAAA GGGTGTGTATGT GCCCTACACCCA GGGCAAGTGGGA GGGGGAA
  Y  R  D  L  R  K  G  V  Y  V  P  Y  T  Q  G  K  W  E  G  E
CTGGG CACCGACCTGGT GAGCATCCCTCA TGGCCCCAACGT CACTGTGCGTGC CAACATT
  L  G  T  D  L  V  S  I  P  H  G  P  N  V  T  V  R  A  N  I
GCTGC CATCACTGAATC GGACAAGTTCTT CATCAATGGTTC CAACTGGGAGGG CATCCTA
  A  A  I  T  E  S  D  K  F  F  I  N  G  S  N  W  E  G  I  L
GGGCT GGCCTATGCTGA GATTGCCAGGCC CGACGACTCTTT GGAGCCCTTCTT TGACTCC
  G  L  A  Y  A  E  I  A  R  P  D  D  S  L  E  P  F  F  D  S
CTGGT GAAGCAGACCCA CATTCCCAACAT CTTTTCCCTGCA GCTCTGTGGCGC TGGCTTC
  L  V  K  Q  T  H  I  P  N  I  F  S  L  Q  L  C  G  A  G  F
CCCCT CAACCAGACCGA GGCACTGGCCTC GGTGGGAGGGAG CATGATCATTGG TGGTATC
  P  L  N  Q  T  E  A  L  A  S  V  G  G  S  M  I  I  G  G  I
GACCA CTCGCTATACAC GGGCAGTCTCTG GTACACACCCAT CCGGCGGGAGTG GTATTAT
  D  H  S  L  Y  T  G  S  L  W  Y  T  P  I  R  R  E  W  Y  Y
GAAGT GATCATTGTACG TGTGGAAATCAA TGGTCAAGATCT CAAGATGGACTG CAAGGAG
  E  V  I  I  V  R  V  E  I  N  G  Q  D  L  K  M  D  C  K  E
TACAA CTACGACAAGAG CATTGTGGACAG TGGGACCACCAA CCTTCGCTTGCC CAAGAAA
  Y  N  Y  D  K  S  I  V  D  S  G  T  T  N  L  R  L  P  K  K
GTATT TGAAGCTGCCGT CAAGTCCATCAA GGCAGCCTCCTC GACGGAGAAGTT CCCGGAT
  V  F  E  A  A  V  K  S  I  K  A  A  S  S  T  E  K  F  P  D
GGCTT TTGGCTAGGGGA GCAGCTGGTGTG CTGGCAAGCAGG CACGACCCCTTG GAACATT
  G  F  W  L  G  E  Q  L  V  C  W  Q  A  G  T  T  P  W  N  I
TTCCC AGTCATTTCACT TTACCTCATGGG TGAAGTCACCAA TCAGTCCTTCCG CATCACC
  F  P  V  I  S  L  Y  L  M  G  E  V  T  N  Q  S  F  R  I  T
ATCCT TCCTCAGCAATA CCTACGGCCGGT GGAGGACGTGGC CACGTCCCAAGA CGACTGT
  I  L  P  Q  Q  Y  L  R  P  V  E  D  V  A  T  S  Q  D  D  C
TACAA GTTCGCTGTCTC ACAGTCATCCAC GGGCACTGTTAT GGGAGCCGTCAT CATGGAA
  Y  K  F  A  V  S  Q  S  S  T  G  T  V  M  G  A  V  I  M  E
GGTTT CTATGTCGTCTT CGATCGAGCCCG AAAGCGAATTGG CTTTGCTGTCAG CGCTTGC
  G  F  Y  V  V  F  D  R  A  R  K  R  I  G  F  A  V  S  A  C
CATGT GCACGATGAGTT CAGGACGGCGGC AGTGGAAGGTCC GTTTGTTACGGC AGACATG
  H  V  H  D  E  F  R  T  A  A  V  E  G  P  F  V  T  A  D  M
GAAGA CTGTGGCTACAA CATTCCCCAGAC AGATGAGTCAAC ACTTATGACCAT AGCCTAT
  E  D  C  G  Y  N  I  P  Q  T  D  E  S  T  L  M  T  I  A  Y
GTCAT GGCGGCCATCTG CGCCCTCTTCAT GTTGCCACTCTG CCTCATGGTATG TCAGTGG
  V  M  A  A  I  C  A  L  F  M  L  P  L  C  L  M  V  C  Q  W
CGCTG CCTGCGTTGCCT GCGCCACCAGCA CGATGACTTTGC TGATGACATCTC CCTGCTC
  R  C  L  R  C  L  R  H  Q  H  D  D  F  A  D  D  I  S  L  L
AAGTA AGGAGGCTCGTG GGCAGATGATGG AGACGCCCCTGG ACCACATCTGGG TGGTTCC
  K
CTTTGGTCACATGAGTT GGAGCTATGGAT GGTACCTGTGGC CAGAGCACCTCA GGACCCT
CACCA ACCTGCCAATGC TTCTGGCGTGAC AGAACAGAGAAA TCAGGCAAGCTG GATTACA
GGGCTTGCACCTGTAGG ACACAGGAGAGG GAAGGAAGCAGC GTTCTGGTGGCA GGAATAT
CCTTA GGCACCACAAAC TTGAGTTGGAAA TTTTGCTGCTTG AAGCTTCAGCCC TGACCCT
CTGCC AGCATCCTTTA GAGTCTCCAACC TAAAGTATTCTT TATGTCCTTCCA GAAGTAC
TGGCG TCATACTCAGGC TACCCGGCATGT GTCCTGTGGTA CCCTGGCAGAGA AAGGGCC
AATCT CATTCCCTGCTG GCCAAAGTCAGC AGAAGAAGGTGA AGTTTGCCAGTT GCTTTAG
TGATA GGGACTGCAGAC TCAAGCCTACAC TGGTACAAAGAC TGCGTCTTGAGA TAAACAA
GAA
```

FIGURE 5

```
  1 MAQALPWLLLWMGAGVLPAHGTQHGIRLPLRSGLGGAPLGLRLPRETDEE  50
    || || |||||.|.|.||| ||  ||||||||||| | |||||||||||||
  1 MAPALHWLLLWVGSGMLPAQGTHLGIRLPLRSGLAGPPLGLRLPRETDEE  50

 51 PEEPGRRGSFVEMVDNLRGKSGQGYYVEMTVGSPPQTLNILVDTGSSNFA 100
    |||||||||||||||||||||||||||||||||||||||||||||||||
 51 SEEPGRRGSFVEMVDNLRGKSGQGYYVEMTVGSPPQTLNILVDTGSSNFA 100

101 VGAAPHPFLHRYYQRQLSSTYRDLRKGVYVPYTQGKWEGELGTDLVSIPH 150
    |||||||||||||||||||||||||||||||||||||||||||||||||
101 VGAAPHPFLHRYYQRQLSSTYRDLRKGVYVPYTQGKWEGELGTDLVSIPH 150

151 GPNVTVRANIAAITESDKFFINGSNWEGILGLAYAEIARPDDSLEPFFDS 200
    |||||||||||||||||||||||||||||||||||||||||||||||||
151 GPNVTVRANIAAITESDKFFINGSNWEGILGLAYAEIARPDDSLEPFFDS 200

201 LVKQTHVPNLFSLQLCGAGFPLNQSEVLASVGGSMIIGGIDHSLYTGSLW 250
    ||||||:||:|||||||||||||.| ||||||||||||||||||||||||
201 LVKQTHIPNIFSLQLCGAGFPLNQTEALASVGGSMIIGGIDHSLYTGSLW 250

251 YTPIRREWYYEVIIVRVEINGQDLKMDCKEYNYDKSIVDSGTTNLRLPKK 300
    |||||||||||||||||||||||||||||||||||||||||||||||||
251 YTPIRREWYYEVIIVRVEINGQDLKMDCKEYNYDKSIVDSGTTNLRLPKK 300

301 VFEAAVKSIKAASSTEKFPDGFWLGEQLVCWQAGTTPWNIFPVISLYLMG 350
    |||||||||||||||||||||||||||||||||||||||||||||||||
301 VFEAAVKSIKAASSTEKFPDGFWLGEQLVCWQAGTTPWNIFPVISLYLMG 350

351 EVTNQSFRITILPQQYLRPVEDVATSQDDCYKFAISQSSTGTVMGAVIME 400
    |||||||||||||||||||||||||||||||:|||||||||||||||||
351 EVTNQSFRITILPQQYLRPVEDVATSQDDCYKFAVSQSSTGTVMGAVIME 400

401 GFYVVFDRARKRIGFAVSACHVHDEFRTAAVEGPFVTLDMEDCGYNIPQT 450
    |||||||||||||||||||||||||||||||||||| |||||||||||
401 GFYVVFDRARKRIGFAVSACHVHDEFRTAAVEGPFVTADMEDCGYNIPQT 450

451 DESTLMTIAYVMAAICALFMLPLCLMVCQWRCLRCLRQQHDDFADDISLL 500
    ||||||||||||||||||||||||||||||||||||||.|.| ||||||||||
451 DESTLMTIAYVMAAICALFMLPLCLMVCQWRCLRCLRHQHDDFADDISLL 500

501 K 501
    |
501 K 501
```

FIGURE 6A

ATGGCTAGC ATGACTGGTGGA CAGCAAATGGGT CGCGGATCCACC CAGCACGGCATC CGG
M   A   S   M   T   G   G   Q   Q   M   G   R   G   S   T   Q   H   G   I   R

CTGCCCCTG CGCAGCGGCCTG GGGGGCGCCCCC CTGGGGCTGCGG CTGCCCCGGGAG ACC
L   P   L   R   S   G   L   G   G   A   P   L   G   L   R   L   P   R   E   T

GACGAAGAG CCCGAGGAGCCC GGCCGGAGGGGC AGCTTTGTGGAG ATGGTGGACAAC CTG
D   E   E   P   E   E   P   G   R   R   G   S   F   V   E   M   V   D   N   L

AGGGGCAAG TCGGGGCAGGGC TACTACGTGGAG ATGACCGTGGGC AGCCCCCCGCAG ACG
R   G   K   S   G   Q   G   Y   Y   V   E   M   T   V   G   S   P   P   Q   T

CTCAACATC CTGGTGGATACA GGCAGCAGTAAC TTTGCAGTGGGT GCTGCCCCCCAC CCC
L   N   I   L   V   D   T   G   S   S   N   F   A   V   G   A   A   P   H   P

TTCCTGCAT CGCTACTACCAG AGGCAGCTGTCC AGCACATACCGG GACCTCCGGAAG GGC
F   L   H   R   Y   Y   Q   R   Q   L   S   S   T   Y   R   D   L   R   K   G

GTGTATGTG CCCTACACCCAG GGCAAGTGGGAA GGGGAGCTGGGC ACCGACCTGGTA AGC
V   Y   V   P   Y   T   Q   G   K   W   E   G   E   L   G   T   D   L   V   S

ATCCCCCAT GGCCCCAACGTC ACTGTGCGTGCC AACATTGCTGCC ATCACTGAATCA GAC
I   P   H   G   P   N   V   T   V   R   A   N   I   A   A   I   T   E   S   D

AAGTTCTTC ATCAACGGCTCC AACTGGGAAGGC ATCCTGGGGCTG GCCTATGCTGAG ATT
K   F   F   I   N   G   S   N   W   E   G   I   L   G   L   A   Y   A   E   I

GCCAGGCCT GACGACTCCCTG GAGCCTTTCTTT GACTCTCTGGTA AAGCAGACCCAC GTT
A   R   P   D   D   S   L   E   P   F   F   D   S   L   V   K   Q   T   H   V

CCCAACCTC TTCTCCCTGCAG CTTTGTGGTGCT GGCTTCCCCCTC AACCAGTCTGAA GTG
P   N   L   F   S   L   Q   L   C   G   A   G   F   P   L   N   Q   S   E   V

CTGGCCTCT GTCGGAGGGAGC ATGATCATTGGA GGTATCGACCAC TCGCTGTACACA GGC
L   A   S   V   G   G   S   M   I   I   G   G   I   D   H   S   L   Y   T   G

AGTCTCTGG TATACACCCATC CGGCGGGAGTGG TATTATGAGGTC ATCATTGTGCGG GTG
S   L   W   Y   T   P   I   R   R   E   W   Y   Y   E   V   I   I   V   R   V

GAGATCAAT GGACAGGATCTG AAAATGGACTGC AAGGAGTACAAC TATGACAAGAGC ATT
E   I   N   G   Q   D   L   K   M   D   C   K   E   Y   N   Y   D   K   S   I

GTGGACAGT GGCACCACCAAC CTTCGTTTGCCC AAGAAAGTGTTT GAAGCTGCAGTC AAA
V   D   S   G   T   T   N   L   R   L   P   K   K   V   F   E   A   A   V   K

TCCATCAAG GCAGCCTCCTCC ACGGAGAAGTTC CCTGATGGTTTC TGGCTAGGAGAG CAG
S   I   K   A   A   S   S   T   E   K   F   P   D   G   F   W   L   G   E   Q

CTGGTGTGC TGGCAAGCAGGC ACCACCCCTTGG AACATTTTCCCA GTCATCTCACTC TAC
L   V   C   W   Q   A   G   T   T   P   W   N   I   F   P   V   I   S   L   Y

CTAATGGGT GAGGTTACCAAC CAGTCCTTCCGC ATCACCATCCTT CCGCAGCAATAC CTG
L   M   G   E   V   T   N   Q   S   F   R   I   T   I   L   P   Q   Q   Y   L

CGGCCAGTGG AAGATGTGGCCA CGTCCCAAGACG ACTGTTACAAGT TTGCCATCTCAC AG

FIGURE 6B

R P V E D V A T S Q D D C Y K F A I S Q

TCATCCACGG GCACTGTTATGG GAGCTGTTATCA TGGAGGGCTTCT ACGTTGTCTTTG AT
S S T G T V M G A V I M E G F Y V V F D

CGGGCCCGAA AACGAATTGGCT TTGCTGTCAGCG CTTGCCATGTGC ACGATGAGTTCA GG
R A R K R I G F A V S A C H V H D E F R

ACGGCAGCGG TGGAAGGCCCTT TTGTCACCTTGG ACATGGAAGACT GTGGCTACAACA TT
T A A V E G P F V T L D M E D C G Y N I

CCACAGACAG ATGAGTCATGA
P Q T D E S *

FIGURE 7A

```
ATGGCTAGC ATGACTGGTGGA CAGCAAATGGGT CGCGGATCGATG ACTATCTCTGAC TCT
 M  A  S   M  T  G  G   Q  Q  M  G   R  G  S  M    T  I  S  D    S

CCGCGTGAA CAGGACGGATCC ACCCAGCACGGC ATCCGGCTGCCC CTGCGCAGCGGC CTG
 P  R  E   Q  D  G  S    T  Q  H  G   I  R  L  P    L  R  S  G   L

GGGGGCGCC CCCCTGGGGCTG CGGCTGCCCCGG GAGACCGACGAA GAGCCCGAGGAG CCC
 G  G  A   P  L  G  L    R  L  P  R    E  T  D  E   E  P  E  E    P

GGCCGGAGG GGCAGCTTTGTG GAGATGGTGGAC AACCTGAGGGGC AAGTCGGGGCAG GGC
 G  R  R   G  S  F  V    E  M  V  D    N  L  R  G   K  S  G  Q    G

TACTACGTG GAGATGACCGTG GGCAGCCCCCCG CAGACGCTCAAC ATCCTGGTGGAT ACA
 Y  Y  V   E  M  T  V    G  S  P  P    Q  T  L  N   I  L  V  D    T

GGCAGCAGT AACTTTGCAGTG GGTGCTGCCCCC CACCCCTTCCTG CATCGCTACTAC CAG
 G  S  S   N  F  A  V    G  A  A  P    H  P  F  L   H  R  Y  Y    Q

AGGCAGCTG TCCAGCACATAC CGGGACCTCCGG AAGGGCGTGTAT GTGCCCTACACC CAG
 R  Q  L   S  S  T  Y    R  D  L  R    K  G  V  Y   V  P  Y  T    Q

GGCAAGTGG GAAGGGGAGCTG GGCACCGACCTG GTAAGCATCCCC CATGGCCCCAAC GTC
 G  K  W   E  G  E  L    G  T  D  L    V  S  I  P   H  G  P  N    V

ACTGTGCGT GCCAACATTGCT GCCATCACTGAA TCAGACAAGTTC TTCATCAACGGC TCC
 T  V  R   A  N  I  A    A  I  T  E    S  D  K  F   F  I  N  G    S

AACTGGGAA GGCATCCTGGGG CTGGCCTATGCT GAGATTGCCAGG CCTGACGACTCC CTG
 N  W  E   G  I  L  G    L  A  Y  A    E  I  A  R   P  D  D  S    L

GAGCCTTTC TTTGACTCTCTG GTAAAGCAGACC CACGTTCCCAAC CTCTTCTCCCTG CAG
 E  P  F   F  D  S  L    V  K  Q  T    H  V  P  N   L  F  S  L    Q

CTTTGTGGT GCTGGCTTCCCC CTCAACCAGTCT GAAGTGCTGGCC TCTGTCGGAGGG AGC
 L  C  G   A  G  F  P    L  N  Q  S    E  V  L  A   S  V  G  G    S

ATGATCATT GGAGGTATCGAC CACTCGCTGTAC ACAGGCAGTCTC TGGTATACACCC ATC
 M  I  I   G  G  I  D    H  S  L  Y    T  G  S  L   W  Y  T  P    I

CGGCGGGAG TGGTATTATGAG GTCATCATTGTG CGGGTGGAGATC AATGGACAGGAT CTG
 R  R  E   W  Y  Y  E    V  I  I  V    R  V  E  I   N  G  Q  D    L

AAAATGGAC TGCAAGGAGTAC AACTATGACAAG AGCATTGTGGAC AGTGGCACCACC AAC
 K  M  D   C  K  E  Y    N  Y  D  K    S  I  V  D   S  G  T  T    N

CTTCGTTTG CCCAAGAAAGTG TTTGAAGCTGCA GTCAAATCCATC AAGGCAGCCTCC TCC
 L  R  L   P  K  K  V    F  E  A  A    V  K  S  I   K  A  A  S    S

ACGGAGAAG TTCCCTGATGGT TTCTGGCTAGGA GAGCAGCTGGTG TGCTGGCAAGCA GGC
 T  E  K   F  P  D  G    F  W  L  G    E  Q  L  V   C  W  Q  A    G

ACCACCCCTT GGAACATTTTCC CAGTCATCTCAC TCTACCTAATGG GTGAGGTTACCA AC
 T  T  P   W  N  I  F    P  V  I  S    L  Y  L  M   G  E  V  T    N
```

FIGURE 7B

```
CAGTCCTTCC GCATCACCATCC TTCCGCAGCAAT ACCTGCGGCCAG TGGAAGATGTGG CC
 Q   S   F   R   I   T   I   L   P   Q   Q   Y   L   R   P   V   E   D   V   A

ACGTCCCAAG ACGACTGTTACA AGTTTGCCATCT CACAGTCATCCA CGGGCACTGTTA TG
 T   S   Q   D   D   C   Y   K   F   A   I   S   Q   S   S   T   G   T   V   M

GGAGCTGTTA TCATGGAGGGCT TCTACGTTGTCT TTGATCGGGCCC GAAAACGAATTG GC
 G   A   V   I   M   E   G   F   Y   V   V   F   D   R   A   R   K   R   I   G

TTTGCTGTCA GCGCTTGCCATG TGCACGATGAGT TCAGGACGGCAG CGGTGGAAGGCC CT
 F   A   V   S   A   C   H   V   H   D   E   F   R   T   A   A   V   E   G   P

TTTGTCACCT TGGACATGGAAG ACTGTGGCTACA ACATTCCACAGA CAGATGAGTCAT GA
 F   V   T   L   D   M   E   D   C   G   Y   N   I   P   Q   T   D   E   S   *
```

FIGURE 8A

```
ATGACTCAGCATGG TATTCGTCTGCC ACTGCGTAGCGG TCTGGGTGGTGC TCCACTGGGT
M  T  Q  H  G  I  R  L  P  L  R  S  G  L  G  G  A  P  L  G  -

CTGCGTCTGCCCCG GGAGACCGACGA AGAGCCCGAGGA GCCCGGCCGGAG GGGCAGCTTT
L  R  L  P  R  E  T  D  E  E  P  E  E  P  G  R  R  G  S  F  -

GTGGAGATGGTGGA CAACCTGAGGGG CAAGTCGGGGCA GGGCTACTACGT GGAGATGACC
V  E  M  V  D  N  L  R  G  K  S  G  Q  G  Y  Y  V  E  M  T  -

GTGGGCAGCCCCCC GCAGACGCTCAA CATCCTGGTGGA TACAGGCAGCAG TAACTTTGCA
V  G  S  P  P  Q  T  L  N  I  L  V  D  T  G  S  S  N  F  A  -

GTGGGTGCTGCCCC CCACCCCTTCCT GCATCGCTACTA CCAGAGGCAGCT GTCCAGCACA
V  G  A  A  P  H  P  F  L  H  R  Y  Y  Q  R  Q  L  S  S  T  -

TACCGGGACCTCCG GAAGGGCGTGTA TGTGCCCTACAC CCAGGGCAAGTG GGAAGGGGAG
Y  R  D  L  R  K  G  V  Y  V  P  Y  T  Q  G  K  W  E  G  E  -

CTGGGCACCGACCT GGTAAGCATCCC CCATGGCCCCAA CGTCACTGTGCG TGCCAACATT
L  G  T  D  L  V  S  I  P  H  G  P  N  V  T  V  R  A  N  I  -

GCTGCCATCACTGA ATCAGACAAGTT CTTCATCAACGG CTCCAACTGGGA AGGCATCCTG
A  A  I  T  E  S  D  K  F  F  I  N  G  S  N  W  E  G  I  L  -

GGGCTGGCCTATGC TGAGATTGCCAG GCCTGACGACTC CCTGGAGCCTTT CTTTGACTCT
G  L  A  Y  A  E  I  A  R  P  D  D  S  L  E  P  F  F  D  S  -

CTGGTAAAGCAGAC CCACGTTCCCAA CCTCTTCTCCCT GCAGCTTTGTGG TGCTGGCTTC
L  V  K  Q  T  H  V  P  N  L  F  S  L  Q  L  C  G  A  F  -

CCCCTCAACCAGTC TGAAGTGCTGGC CTCTGTCGGAGG GAGCATGATCAT TGGAGGTATC
P  L  N  Q  S  E  V  L  A  S  V  G  G  S  M  I  I  G  G  I  -

GACCACTCGCTGTA CACAGGCAGTCT CTGGTATACACC CATCCGGCGGGA GTGGTATTAT
D  H  S  L  Y  T  G  S  L  W  Y  T  P  I  R  R  E  W  Y  Y  -

GAGGTCATCATTGT GCGGGTGGAGAT CAATGGACAGGA TCTGAAAATGGA CTGCAAGGAG
E  V  I  I  V  R  V  E  I  N  G  Q  D  L  K  M  D  C  K  E  -

TACAACTATGACAA GAGCATTGTGGA CAGTGGCACCAC CAACCTTCGTTT GCCCAAGAAA
Y  N  Y  D  K  S  I  V  D  S  G  T  T  N  L  R  L  P  K  K  -

GTGTTTGAAGCTGC AGTCAAATCCAT CAAGGCAGCCTC CTCCACGGAGAA GTTCCCTGAT
V  F  E  A  A  V  K  S  I  K  A  A  S  S  T  E  K  F  P  D  -

GGTTTCTGGCTAGG AGAGCAGCTGGT GTGCTGGCAAGC AGGCACCACCCC TTGGAACATT
G  F  W  L  G  E  Q  L  V  C  W  Q  A  G  T  T  P  W  N  I  -

TTCCCAGTCATCTC ACTCTACCTAAT GGGTGAGGTTAC CAACCAGTCCTT TCGCATCACC
F  P  V  I  S  L  Y  L  M  G  E  V  T  N  Q  S  F  R  I  T  -

ATCCTTCCGCAGCA ATACCTGCGGCC AGTGGAAGATGT GGCCACGTCCCA AGACGACTGT
I  L  P  Q  Q  Y  L  R  P  V  E  D  V  A  T  S  Q  D  D  C  -
```

FIGURE 8B

```
TACAAGTTTGCCAT CTCACAGTCATC CACGGGCACTGT TATGGGAGCTGT TATCATGGAG
Y   K   F   A   I   S   Q   S   S   T   G   T   V   M   G   A   V   I   M   E   -

GGCTTCTACGTTGT CTTTGATCGGGC CCGAAAACGAAT TGGCTTTGCTGT CAGCGCTTGC
G   F   Y   V   V   F   D   R   A   R   K   R   I   G   F   A   V   S   A   C   -

CATTAG
H   *
```
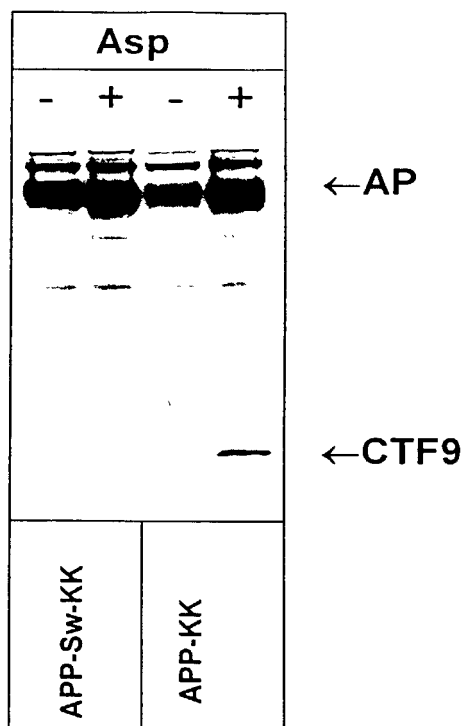
FIGURE 9

FIGURE 10

FIGURE 11

MAQALPWLLLWMGAGVLPAHGTQHGIRLPLRSGLGGAPLGLRLPRETDEE
PEEPGRRGSFVEMVDNLRGKSGQGYYVEMTVGSPPQTLNILVDTGSSNFA
VGAAPHPFLHRYYQRQLSSTYRDLRKGVYVPYTQGKWEGELGTDLVSIPH
GPNVTVRANIAAITESDKFFINGSNWEGILGLAYAEIARPDDSLEPFFDS
LVKQTHVPNLFSLQLCGAGFPLNQSEVLASVGGSMIIGGIDHSLYTGSLW
YTPIRREWYYEVIIVRVEINGQDLKMDCKEYNYDKSIVDSGTTNLRLPKK
VFEAAVKSIKAASSTEKFPDGFWLGEQLVCWQAGTTPWNIFPVISLYLMG
EVTNQSFRITILPQQYLRPVEDVATSQDDCYKFAISQSSTGTVMGAVIME
GFYVVFDRARKRIGFAVSACHVHDEFRTAAVEGPFVTLDMEDCGYNIPQT
DES

FIGURE 12

MAQALPWLLLWMGAGVLPAHGTQHGIRLPLRSGLGGAPLGLRLPRETDEE
PEEPGRRGSFVEMVDNLRGKSGQGYYVEMTVGSPPQTLNILVDTGSSNFA
VGAAPHPFLHRYYQRQLSSTYRDLRKGVYVPYTQGKWEGELGTDLVSIPH
GPNVTVRANIAAITESDKFFINGSNWEGILGLAYAEIARPDDSLEPFFDS
LVKQTHVPNLFSLQLCGAGFPLNQSEVLASVGGSMIIGGIDHSLYTGSLW
YTPIRREWYYEVIIVRVEINGQDLKMDCKEYNYDKSIVDSGTTNLRLPKK
VFEAAVKSIKAASSTEKFPDGFWLGEQLVCWQAGTTPWNIFPVISLYLMG
EVTNQSFRITILPQQYLRPVEDVATSQDDCYKFAISQSSTGTVMGAVIME
GFYVVFDRARKRIGFAVSACHVHDEFRTAAVEGPFVTLDMEDCGYNIPQT
DESHHHHHH